

## **REPORT OF THE COMMITTEE ON ENVIRONMENTAL CONTROL**

**October 2, 2008**

The Honorable,  
The Board of Commissioners of Cook County

### **ATTENDANCE**

Present: Chairman Quigley, Vice Chairman Silvestri, Commissioners Beavers, Gorman and Steele (5)

Absent: Commissioners Moreno and Peraica (2)

Also Present: Mark Kilgallon - Chief Administrative Officer.

Ladies and Gentlemen:

Your Committee on Environmental Control of the Board of Commissioners of Cook County met pursuant to notice on Thursday, October 2, 2008 at the hour of 9:30 AM in the Board Room, Room 569, County Building, 118 North Clark Street, Chicago, Illinois.

Your Committee has considered the following item and upon adoption of this report, the recommendation is as follows:

295887        BUREAU OF ADMINISTRATION, MARK KILGALLON, Chief Administrative Officer; Transmitting a Communication:

the Bureau of Administration, Industrial Engineering, the Department of Facilities Management, and the Office of the Purchasing Agent hereby jointly submit the Cook County Bottled Water Analysis Report as required by Resolution 08-R-68 which was approved and adopted by the Board of Commissioners on February 20, 2008.

I respectfully request the opportunity to discuss this report with the Environmental Control Committee of the Board of Commissioners.

**\*Referred to the Committee on Environmental Control on September 3, 2008.**

Chairman Quigley informed the Committee that the Cook County Bottled Water Analysis Report from Mark Kilgallon, Chief Administrative Officer will be received and file.

Chairman Quigley asked Mr. Kilgallon to go through the report and explain its contents.

Commissioner Silvestri asked if the Administration had chosen an option.

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Chairman Quigley indicated that the Administration had chosen option two.

**Vice Chairman Silvestri, seconded by Commissioner Steele, moved to Receive and File Communication No. 295887. The motion carried.**

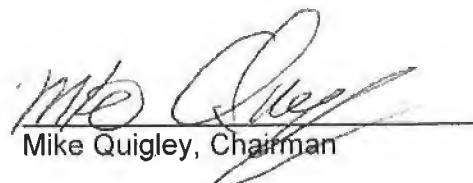
**Vice Chairman Silvestri moved to adjourn the meeting, seconded by Commissioner Gorman. The motion carried and the meeting was adjourned.**

**YOUR COMMITTEE RECOMMENDS THE FOLLOWING ACTION  
WITH REGARD TO THE MATTERS NAMED HEREIN:**

Communication Number 295887

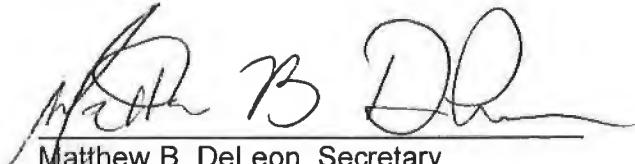
Receive and File

Respectfully submitted,  
Committee on Environmental Control



Mike Quigley, Chairman

Attest:



Matthew B. DeLeon

Matthew B. DeLeon, Secretary

\*\* The audio recording for this meeting is available from the Office of the Secretary to the Board, 118 North Clark Street, Room 567, Chicago, IL 60602.



# Cook County Bottled Water Analysis

June 2008

Completed By:

Bureau of Administration - Industrial Engineering  
Facilities Management  
Purchasing

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## **Executive Summary**

As required by Cook County Resolution 08-R-68 adopted by the Board of Commissioners regarding the Bottled Water Ban, Facilities Management, Purchasing, and the Bureau of Administration Industrial Engineers conducted a Countywide survey of all departments to assess their current water usage, availability of fresh tap water, feasibility and cost of installing water purification systems, and the financial, logistical, and operational impact on County Departments. The study also included analyzing the viability of switching all bottled water dispensers to bottle-less water dispensers including the associated costs and the viability of turning on all currently disconnected drinking water fountains. All County departments responded to the survey. The major findings are as follows:

- There are a total of 1,792 owned/leased drinking water systems (1,210 bottled water systems, 30 bottle-less water purification systems, 552 drinking fountains) County wide over 60 different facilities. Because the County does not own and/or operate all these facilities, there are a portion of bottled water systems which will be very difficult to replace.
- Of the 1,210 bottled water systems, 1,088 (90%) are owned and 122 (10%) are leased.
- The County currently spends an average of \$380,320 annually on drinking water systems and bottled water refills. This total includes lease costs, bottled water refills, and filters. The average annual cost for bottled water refills is \$290 and lease cost is \$237.
- The Bureau of Health only has a total of 14 bottled water coolers. The BOH Chief Financial Officer and former Chief Operating Officer eliminated all bottled water coolers where possible over the past year which reduced their annual bottled water cost by an estimated \$172,969.
- The top five departments by number of bottled water coolers and annual cost are the Sheriff's Office (178 coolers, \$145,757), Chief Judge (460 coolers, \$81,289), Clerk of the Court (127 coolers, \$26,752), State's Attorney (77 coolers, \$21,408), and Adult Probation (55 coolers, \$10,566). These five offices account for 76% of the County's total drinking water coolers and costs.
- Facilities Management determined that of the 443 drinking fountains surveyed over 27 facilities, 397 (89.6%) currently operate properly. However, these systems are not being utilized by employees due to a perception that the water is not acceptable to drink.
- Facilities Management had the quality of the water tested in twelve County facilities including the County Building, 69 W. Washington, Forensic Institute, five suburban courthouses, Domestic Violence Courthouse, Hawthorne Warehouse, Juvenile Temporary Detention Center, and Juvenile Court and determined that the water met all EPA standards and is acceptable to drink.

- Installation of bottle-less water systems is more costly than originally anticipated due to County requirements which requires the use of union plumbers which are paid considerably more than the vendor's non-union installers. Additionally, building code requires the use of copper or stainless steel piping, not plastic tubing which is typically used by the vendors and less expensive.

#### **Replacement Alternatives and Associated Costs**

Three alternative options and their associative costs have been developed to address the elimination of bottled water coolers and are as follows:

**Option I** is to replace all existing bottled water coolers with bottle-less systems in facilities which are owned and operated by the County. In order to replace the 334 units in the Daley Center, the County would need to work with the Public Building Commission to have the project funded and approved. If all 1,210 bottled water coolers were replaced, the estimated initial capital cost is \$2,057,000, with a five year estimated cost of \$2,783,000 which includes maintenance, annual replacement of filters, and disposal of existing coolers. This option would eliminate the estimated \$380,320 annual cost of bottled water. This option would have a payback in approximately 8.4 years.

**Option II** is a phased replacement of the bottled water coolers. Phase I would have bottle-less water coolers installed on a building by building basis, in all locations near an existing water source and require departments to eliminate all their bottled water coolers. All departments would have access to at least one water cooler. Exceptions would be made to keep bottled water coolers in locations that have public health concerns and do not have a water source in close proximity. Phase II would be to assess the needs of each facility and department for additional bottle-less water systems that are necessary for logistical or public health reasons. Once an assessment is completed, additional bottle-less water systems could be installed. This Option will spread the cost of the these replacements over a period of several years and immediately reduce the number of water cooler systems County wide. Assuming half of the bottled water coolers are replaced, the estimated initial capital cost is \$1,028,500, with a total five year estimated cost of \$1,391,500. This option would have a payback in approximately 3.4 years.

**Option III** is to install building wide filtration systems in County owned facilities and is the most costly of the three options. This system would filter, purify, and store water in a large tank and distribute throughout the building either through existing or new pipe. The estimated capital cost of a building wide filtration system and tank varies greatly and is dependant on many factors including incoming water quality, daily usage, and physical building characteristics and costs between \$20,000 and \$160,000. This estimated cost includes the capital cost of the system equipment, however, does not include the costs of system installation, new or additional required plumbing, individual dispensers/fountains, or system maintenance, all of which could be very costly. If drinking water was not separately plumbed from hygienic or operational usage (i.e. toilets, chillers/boilers, landscaping, etc.) a larger system would be required. Even though a dedicated drinking water system would require a smaller system, a large amount of new plumbing would need to be installed.

## **Introduction**

As required by the Board of Commissioners through the adoption of Resolution 07-R-436 (see Appendix) on November 6, 2007, Facilities Management, Purchasing and the Bureau of Administration Industrial Engineers have been working together to assess current water usage and determine the viability of switching to bottle-less water dispensers.

The resolution states:

“...that the Purchasing Agent and the Bureau of Administration shall, within 90 days of passage, work with all County departments to conduct a water audit to assess their current water usage, availability of fresh tap water, and the feasibility and cost of installing water purification systems; and...that such audit shall determine the viability of switching all bottled water dispensers to bottle-less water dispensers; and...that such audit shall also determine the viability of turning on all currently disconnected drinking water fountains...”

Resolution 07-R-436 was later suspended by resolution 08-R-68 (see Appendix), passed on February 20, 2008 to “allow greater due diligence and proper audit and assessment of financial, logistical, and operational impact of the Cook County Bottled Water Ban.” The resolution also states that “the Bureau of Administration shall present their findings no later than July 1, 2008.”

## **Methodology**

The methodology for this audit included the development of a Drinking Water Survey (see Appendix) and the gathering of water system, usage, and cost data from all County departments. Surveys were prepared electronically by all departments and submitted through email. The survey responses were entered into a database and analyzed regarding their current water usage as well as the number, location, type and cost of current purchased/leased water systems was performed. The study also included the analysis of expenditure data provided by the Comptroller’s Office, and analysis of the costs and feasibility associated with the installation and operation of bottle-less water systems based on information provided by Facilities Management and bottle-less water system vendors.

Facilities Management performed a survey of drinking fountains in 24 County owned facilities and determined whether or not the fountains worked properly. This survey captured the drinking fountains which were not specifically used by a departments and were primarily located in public areas.

## **Findings**

### **Drinking Water Survey**

The Drinking Water Survey (see Appendix) was developed and sent to all County departments to determine the number and types of drinking water systems, locations, water usage, costs, and other information. The results of this survey are summarized in Tables 1-3 as seen on pages 7-9.

Table 1 shows the quantity and type of drinking water systems by department, Table 2 shows the quantity/type of systems by building/location, and Table 3 shows drinking water expenditures by department for FY2005 through FY2007.

The major findings of this survey are as follows:

- The County currently owns/leases 1,792 drinking water systems throughout 60 facilities, with associated average annual costs of \$380,320.
- Table 1 shows that of the current 1,792 drinking water systems, there are 1,210 bottled water systems (1,088 owned, 122 leased), 30 water purification systems (28 owned, 2 leased), and 552 drinking fountains. These systems are installed in 60 different facilities occupied by County agencies.
- The Chief Judge's Office has the largest number of bottled water coolers with 460, or 38% of the County's total of 1,210. These are primarily located in the chambers, ante chambers, jury rooms, and court rooms. Many of the judges chambers currently have plumbing. The department with the second largest bottled water cooler inventory is the Sheriff's Office with 178, or 14.7%. This total includes all sections of the Sheriff's Office including the Department of Corrections.
- The top five departments by number of bottled water coolers and annual cost are the Sheriff's Office (178 coolers, \$145,757), Chief Judge (460 coolers, \$81,289), Clerk of the Court (127 coolers, \$26,752), State's Attorney (77 coolers, \$21,408), and Adult Probation (55 coolers, \$10,566). These five offices account for 76% of the County's total drinking water coolers and costs.
- The Bureau of Health only has a total of 14 bottled water coolers: Oak Forest (9), Cermak (4), and Ambulatory (1). The BOH Chief Financial Officer and former Chief Operating Officer eliminated all bottled water coolers where possible over the past year which reduced their bottled water cost by \$172,969. The County's estimated annual cost, in turn, has been reduced from \$553,289 to \$380,320. The Bureau of Health currently utilizes a 144 drinking fountains and 26 bottle-less coolers throughout their facilities.
- The Daley Center has the largest number of bottled water coolers with 334, or 27.6% of the County's total of 1,210.

- 90% of the County's bottled water coolers are located in 18 of the 60 facilities surveyed.  
90% of the County's bottled water coolers are used 14 of the 55 departments surveyed.
- The average annual cost for bottled water refills per cooler is \$290. The average annual lease cost for the County's 122 leased bottled water coolers is \$237, not including water.
- Of the existing 1,210 water cooler systems, only 67 responses noted that the system is within 50 feet of existing plumbing to install a water purification system. This low percentage was confirmed by a walkthrough by Facilities Management of the Bridgeview Courthouse in which there are limited water sources within departmental office space.

**Table 1: Drinking Water Systems Inventory by Department (sorted by # of bottled water coolers)**

Department	Bottled Water Cooler		Water Purification System		Drinking Fountain (does not include public fountains)		Total	% of Total	Bottled Water Coolers		
	Owned	Leased	Owned	Leased			Total	%	Total	%	
Chief Judge	460						<b>460</b>	<b>31.8%</b>	460	38.0%	
Sheriff's Offices	178						<b>178</b>	<b>12.3%</b>	178	14.7%	
Clerk of the Court	92	35					<b>127</b>	<b>8.8%</b>	127	10.5%	
State's Attorney	77				16		<b>93</b>	<b>6.4%</b>	77	6.4%	
Adult Probation	55						<b>55</b>	<b>3.8%</b>	55	4.5%	
County Clerk	35						<b>35</b>	<b>2.4%</b>	35	2.9%	
Assessor	27						<b>27</b>	<b>1.9%</b>	27	2.2%	
Juvenile Probation		23					<b>23</b>	<b>1.6%</b>	23	1.9%	
Board of Review	22						<b>22</b>	<b>1.5%</b>	22	1.8%	
Public Defender		20					<b>20</b>	<b>1.4%</b>	20	1.7%	
Recorder of Deeds	20						<b>20</b>	<b>1.4%</b>	20	1.7%	
Highway Department	19						<b>19</b>	<b>1.3%</b>	19	1.6%	
Social Services	14						<b>14</b>	<b>1.0%</b>	14	1.2%	
Treasurer	11						<b>11</b>	<b>0.8%</b>	11	0.9%	
Public Guardian	10						<b>10</b>	<b>0.7%</b>	10	0.8%	
Law Library	9						<b>9</b>	<b>0.6%</b>	9	0.7%	
Oak Forest Hospital	4	5	25		25		<b>59</b>	<b>4.1%</b>	9	0.7%	
Central Services	8						<b>8</b>	<b>0.6%</b>	8	0.7%	
Facilities Management	8						<b>8</b>	<b>0.6%</b>	8	0.7%	
Juvenile Temporary Detention Center		8					<b>8</b>	<b>0.6%</b>	8	0.7%	
Human Resources	2	5		2			<b>9</b>	<b>0.6%</b>	7	0.6%	
Revenue		5					<b>5</b>	<b>0.3%</b>	5	0.4%	
State's Attorney - Child Support	5				2		<b>7</b>	<b>0.5%</b>	5	0.4%	
Building and Zoning	4						<b>4</b>	<b>0.3%</b>	4	0.3%	
Cermak		4			28		<b>32</b>	<b>2.2%</b>	4	0.3%	
MIS	4						<b>4</b>	<b>0.3%</b>	4	0.3%	
Board of Commissioners		3					<b>3</b>	<b>0.2%</b>	3	0.2%	
Medical Examiner's Office		3			11		<b>14</b>	<b>1.0%</b>	3	0.2%	
Purchasing	3						<b>3</b>	<b>0.2%</b>	3	0.2%	
Risk Management		3					<b>3</b>	<b>0.2%</b>	3	0.2%	
Animal Control	2						<b>2</b>	<b>0.1%</b>	2	0.2%	
Budget and Management Services	2						<b>2</b>	<b>0.1%</b>	2	0.2%	
Forensic Clinical Services	2						<b>2</b>	<b>0.1%</b>	2	0.2%	
Planning and Development		2					<b>2</b>	<b>0.1%</b>	2	0.2%	
POET	2					1	<b>3</b>	<b>0.2%</b>	2	0.2%	
President's Office	1	1				1	<b>3</b>	<b>0.2%</b>	2	0.2%	
Real Estate Management		2					<b>2</b>	<b>0.1%</b>	2	0.2%	
Adoption and Child Custody Advocacy		1					<b>1</b>	<b>0.1%</b>	1	0.1%	
Ambulatory	1		1		13		<b>15</b>	<b>1.0%</b>	1	0.1%	
Auditor	1		1			1	<b>3</b>	<b>0.2%</b>	1	0.1%	
Bureau of Technology	1					1	<b>2</b>	<b>0.1%</b>	1	0.1%	
Capital Planning and Policy		1					<b>1</b>	<b>0.1%</b>	1	0.1%	
Chief Administrative Officer	1						<b>1</b>	<b>0.1%</b>	1	0.1%	
Contract Compliance		1					<b>1</b>	<b>0.1%</b>	1	0.1%	
Environmental Control	1		1				<b>2</b>	<b>0.1%</b>	1	0.1%	
Human Rights/Ethics	1						<b>1</b>	<b>0.1%</b>	1	0.1%	
Inspector General	1						<b>1</b>	<b>0.1%</b>	1	0.1%	
Judicial Advisory Council	1						<b>1</b>	<b>0.1%</b>	1	0.1%	
Office Technology	1						<b>1</b>	<b>0.1%</b>	1	0.1%	
Public Administrator	1						<b>1</b>	<b>0.1%</b>	1	0.1%	
Veterans Assistance Commission	1						<b>1</b>	<b>0.1%</b>	1	0.1%	
Zoning Board of Appeals	1						<b>1</b>	<b>0.1%</b>	1	0.1%	
CORE Center					1		<b>1</b>	<b>0.1%</b>	0	0.0%	
Provident Hospital					35		<b>35</b>	<b>2.4%</b>	0	0.0%	
Stroger Hospital					70		<b>70</b>	<b>4.8%</b>	0	0.0%	
<b>Total</b>	<b>1,088</b>	<b>122</b>	<b>28</b>	<b>2</b>			<b>205</b>	<b>1,445</b>	<b>100.0%</b>	<b>1,210</b>	<b>100.0%</b>
	<b>1,088</b>	<b>122</b>	<b>28</b>	<b>2</b>			<b>205</b>				
	<b>1,088</b>	<b>122</b>	<b>28</b>	<b>2</b>			<b>205</b>				

**Table 2: Drinking Water Systems Inventory by Location (sorted by # of bottled water coolers)**

Location	Bottled Water Cooler		Water Purification System		Drinking Fountain		Total	% of Total	Bottled Water Coolers	
	Owned	Leased	Owned	Leased	Office	Public			Total	%
50 W. Washington (Daley Center)	324	10			4		338	18.9%	334	27.6%
118 N. Clark	99	17			1	16	135	7.5%	116	9.6%
69 W. Washington	75	11	1		3		90	5.0%	86	7.1%
16501 S. Kedzie Parkway	56	8			2	25	91	5.1%	64	5.3%
10220 S. 76th Avenue	60	2				30	92	5.1%	62	5.1%
2650 S. California	58	2			8	13	81	4.5%	60	5.0%
5600 Old Orchard Road	50	10			1	24	85	4.7%	60	5.0%
2245 W. Ogden	53	2				18	73	4.1%	55	4.5%
1100 S. Hamilton	20	28				16	64	3.6%	48	4.0%
1500 S. Maybrook Drive	40	2	1			8	51	2.8%	42	3.5%
3026 S. California	42					42	84	4.7%	42	3.5%
2700 S. California	23					14	37	2.1%	23	1.9%
2323 S. Rockwell	17	4			10		31	1.7%	21	1.7%
1401 S. Maybrook Drive	18					3	21	1.2%	18	1.5%
2600 S. California	18					9	27	1.5%	18	1.5%
2121 Euclid Avenue	13	4				24	41	2.3%	17	1.4%
555 W. Harrison	12	1			1	26	40	2.2%	13	1.1%
1644 W. Walnut	12						12	0.7%	12	1.0%
5555 W. Grand	9	1					10	0.6%	10	0.8%
15900 S. Cicero Avenue	4	5	25		25		59	3.3%	9	0.7%
1311 S. Maybrook Drive	8					4	12	0.7%	8	0.7%
2717 S. Sacramento	8					40	48	2.7%	8	0.7%
28 N. Clark	5	3			2		10	0.6%	8	0.7%
2801 S. Sacramento	7					11	18	1.0%	7	0.6%
2452 W. Belmont	5	1					6	0.3%	6	0.5%
2801 S. Rockwell	6					13	19	1.1%	6	0.5%
727 E. 111th	6						6	0.3%	5	0.4%
2750 S. California	5					20	25	1.4%	5	0.4%
3150 W. Flournoy	5						5	0.3%	4	0.3%
155 W. 51st St.	4						4	0.2%	4	0.3%
2800 S. California		4				5	9	0.5%	3	0.2%
16333 S. Kilbourn	3						3	0.2%	3	0.2%
2121 W. Harrison		3			4	7	14	0.8%	3	0.2%
4545 W. Cermak	3				4		7	0.4%	3	0.2%
2834 W. 31st Street	2						2	0.1%	2	0.2%
2950 S. California	2						2	0.1%	2	0.2%
3151 W. Harrison	1	1					2	0.1%	2	0.2%
4734 W. Chicago Avenue	2						2	0.1%	2	0.2%
51st & Wentworth	1	1					2	0.1%	2	0.2%
111th & Cottage Grove		1					1	0.1%	1	0.1%
1645 Cottage Grove	1				6		7	0.4%	1	0.1%
2000 N. 5th Avenue	1						1	0.1%	1	0.1%
2138 S. 61st Court Cicero, IL 60824	1						1	0.1%	1	0.1%
221 N. LaSalle		1					1	0.1%	1	0.1%
2600 W. 103rd Bridgeview, IL	1						1	0.1%	1	0.1%
2940 W. 31st Street	1						1	0.1%	1	0.1%
3150 S. California	1						1	0.1%	1	0.1%
35 S. 19th Avenue Maywood, IL	1						1	0.1%	1	0.1%
4200 N. Oak Park Ave.	1						1	0.1%	1	0.1%
533 E. 103rd St.	1						1	0.1%	1	0.1%
855 E. 26th Street	1						1	0.1%	1	0.1%
9511 W. Harrison 911 Center	1						1	0.1%	1	0.1%
Moraine Valley, Palos Hill	1						1	0.1%	1	0.1%
1585 N. Rand Road, Palatine					1		1	0.1%	0	0.0%
1901 W. Harrison					72		72	4.0%	0	0.0%
2020 W. Harrison					1		1	0.1%	0	0.0%
2840 W. Fullerton			1				1	0.1%	0	0.0%
4909 W. Division					2		2	0.1%	0	0.0%
500 E. 51st Street					35		35	2.0%	0	0.0%
6337 S. Woodlawn					2		2	0.1%	0	0.0%
<b>Total</b>	<b>1,088</b>	<b>122</b>	<b>28</b>	<b>2</b>	<b>184</b>	<b>368</b>	<b>1,792</b>	<b>100.0%</b>	<b>1,210</b>	<b>100.0%</b>

**Table 3: Cook County Water Costs by Department (2005 - 2007)**

Department	2005	2006	2007	3 Year Total	Annual Average	Annual Average Excluding BOH	% of Total
Sheriff's Offices	\$99,025.71	\$182,050.81	\$156,193.66	\$437,270.18	\$145,756.73	\$145,756.73	38.3%
Chief Judge	\$76,402.73	\$70,068.99	\$97,395.86	\$243,867.58	\$81,289.19	\$81,289.19	21.4%
Clerk of the Court	\$37,465.20	\$4,334.48	\$38,456.41	\$80,256.09	\$26,752.03	\$26,752.03	7.0%
State's Attorney	\$17,860.63	\$24,858.70	\$21,505.39	\$64,224.72	\$21,408.24	\$21,408.24	5.6%
Adult Probation	\$15,747.54	\$15,830.21	\$118.92	\$31,696.67	\$10,565.56	\$10,565.56	2.8%
Juvenile Probation	\$3,854.08	\$18,739.86	\$7,915.49	\$30,509.43	\$10,169.81	\$10,169.81	2.7%
County Clerk	\$5,750.00	\$4,886.21	\$10,129.58	\$20,765.79	\$6,921.93	\$6,921.93	1.8%
Public Health	\$2,997.33	\$8,408.45	\$3,851.90	\$15,257.68	\$5,085.89	\$5,085.89	1.3%
Public Guardian	\$4,143.88	\$3,537.90	\$6,127.99	\$13,809.77	\$4,603.26	\$4,603.26	1.2%
Recorder of Deeds			\$10,951.44	\$2,821.44	\$13,772.88	\$4,590.96	\$4,590.96
Highway	\$6,655.00	\$1,498.00	\$4,448.40	\$12,601.40	\$4,200.47	\$4,200.47	1.1%
Assessor			\$5,420.00	\$6,099.24	\$11,519.24	\$3,839.75	\$3,839.75
Medical Examiner	\$93.88	\$11,134.76	\$93.88	\$11,322.52	\$3,774.17	\$3,774.17	1.0%
Facilities Management	\$2,765.58	\$3,538.58	\$4,722.14	\$11,026.30	\$3,675.43	\$3,675.43	1.0%
Office of the County Commissioners	\$2,910.73	\$4,324.37	\$3,430.69	\$10,665.79	\$3,555.26	\$3,555.26	0.9%
Treasurer	\$2,407.41	\$1,883.49	\$5,350.56	\$9,641.46	\$3,213.82	\$3,213.82	0.8%
MIS	\$1,525.46	\$1,497.32	\$6,329.09	\$9,351.87	\$3,117.29	\$3,117.29	0.8%
Social Services	\$1,064.97	\$2,646.79	\$4,961.27	\$8,673.03	\$2,891.01	\$2,891.01	0.8%
Board of Review	\$1,793.09	\$2,534.52	\$4,178.26	\$8,505.87	\$2,835.29	\$2,835.29	0.7%
Cermak Health Services <sup>2</sup>	\$1,085.91	\$5,695.34	\$4,067.20	\$10,848.45	\$3,616.15	\$2,500.00	0.7%
Comptroller	\$2,384.74	\$1,733.23	\$3,182.09	\$7,300.06	\$2,433.35	\$2,433.35	0.6%
Public Defender			\$7,100.23	\$7,100.23	\$2,366.74	\$2,366.74	0.6%
Human Resources	\$1,591.19	\$2,557.39	\$2,411.84	\$6,560.42	\$2,186.81	\$2,186.81	0.6%
JTDC	\$1,748.13	\$3,916.85	\$150.00	\$5,814.98	\$1,938.33	\$1,938.33	0.5%
Revenue	\$1,389.49	\$1,578.69	\$2,386.62	\$5,534.80	\$1,784.93	\$1,784.93	0.5%
Law Library	\$965.77	\$1,734.39	\$1,986.11	\$4,686.27	\$1,562.09	\$1,562.09	0.4%
Central Services	\$1,798.00	\$930.71	\$1,315.73	\$4,044.44	\$1,348.15	\$1,348.15	0.4%
Planning and Development	\$1,077.53	\$1,194.65	\$1,644.93	\$3,917.11	\$1,305.70	\$1,305.70	0.3%
POET	\$1,376.70	\$1,117.06	\$1,260.34	\$3,754.10	\$1,251.37	\$1,251.37	0.3%
Risk Management	\$1,076.67	\$1,281.80	\$1,281.63	\$3,640.10	\$1,213.37	\$1,213.37	0.3%
Office of the President	\$1,912.30	\$1,133.35	\$543.89	\$3,589.54	\$1,196.51	\$1,196.51	0.3%
Chief Health Administrator	\$694.84	\$693.54	\$1,727.39	\$3,115.77	\$1,038.59	\$1,038.59	0.3%
Human Rights, Ethics, and Women's Issues	\$915.38	\$1,006.01	\$705.98	\$2,627.37	\$875.79	\$875.79	0.2%
Purchasing	\$1,736.00	\$504.00	\$299.00	\$2,539.00	\$846.33	\$846.33	0.2%
Environmental Control	\$674.99	\$1,240.65	\$621.70	\$2,537.34	\$845.78	\$845.78	0.2%
Oak Forest Hospital <sup>2</sup>	\$1,054.28	\$1,430.58		\$2,484.86	\$828.29	\$828.29	0.2%
Building and Zoning	\$1,045.00	\$1,047.00		\$2,092.00	\$697.33	\$697.33	0.2%
Capital Planning and Policy	\$338.96	\$813.89	\$867.24	\$2,020.09	\$673.36	\$673.36	0.2%
Public Affairs and Communications	\$357.42	\$382.47	\$1,066.56	\$1,806.45	\$602.15	\$602.15	0.2%
Chief Administrative Officer	\$551.27	\$453.07	\$711.95	\$1,716.29	\$572.10	\$572.10	0.2%
Forensic Clinical Services	\$480.25	\$474.78	\$624.00	\$1,579.03	\$526.34	\$526.34	0.1%
Public Administrator	\$439.29	\$526.36	\$529.91	\$1,495.56	\$498.52	\$498.52	0.1%
Judicial Advisory Council	\$470.79	\$597.11	\$236.48	\$1,304.38	\$434.79	\$434.79	0.1%
Veterans' Assistance Commission	\$411.77	\$462.50	\$426.40	\$1,300.67	\$433.56	\$433.56	0.1%
Contract Compliance	\$432.75	\$472.50	\$390.00	\$1,295.25	\$431.75	\$431.75	0.1%
Animal Control	\$244.20	\$203.50	\$641.60	\$1,089.30	\$363.10	\$363.10	0.1%
Inspector General		\$601.52	\$348.60	\$950.12	\$316.71	\$316.71	0.1%
Fixed Charges - Public Safety	\$524.35	\$272.07		\$796.42	\$265.47	\$265.47	0.1%
Chief Information Officer	\$517.60	\$176.21		\$693.81	\$231.27	\$231.27	0.1%
Budget and Management Services	\$358.30	\$78.87	\$234.58	\$671.75	\$223.92	\$223.92	0.1%
Auditor	\$50.15	\$215.35	\$32.45	\$297.95	\$99.32	\$99.32	0.0%
Zoning Board of Appeals		\$28.05	\$190.74	\$218.79	\$72.93	\$72.93	0.0%
Adoption and Child Custody Advocacy	\$113.79	\$67.81	\$33.49	\$215.09	\$71.70	\$71.70	0.0%
Office of the Chief Coordinator		\$112.20		\$112.20	\$37.40	\$37.40	0.0%
Sroger Hospital <sup>1</sup>	\$117,324.90	\$153,130.23	\$113,745.54	\$384,200.67	\$128,066.89	\$0.00	0.0%
Ambulatory and Community Health Network <sup>1</sup>	\$28,393.00	\$28,882.87	\$18,601.75	\$75,877.62	\$25,292.54	\$0.00	0.0%
Provident Hospital <sup>1</sup>	\$3,587.72	\$16,915.48	\$34,002.56	\$54,505.76	\$18,168.59	\$0.00	0.0%
CORE Center <sup>1</sup>	\$326.30	\$371.66	\$277.17	\$975.13	\$325.04	\$0.00	0.0%
<b>Total</b>	<b>\$459,912.95</b>	<b>\$612,178.62</b>	<b>\$587,775.87</b>	<b>\$1,659,867.44</b>	<b>\$553,289.15</b>	<b>\$380,319.94</b>	<b>100.0%</b>

<sup>1</sup> During FY2007, the Bureau of Health eliminated all bottled water coolers where possible throughout their facilities, saving an average of \$172,969 annually.

<sup>2</sup> Oak Forest Hospital and Cermak still have bottled water coolers remaining, 9 and 4 respectively, in locations where no tap or bottle-less water coolers are available. Cermak estimated annual cost of \$2,500, lower than the average over the past three years, was based on costs provided through the survey.

### **Drinking Fountains and Water Quality**

Facilities Management performed an audit of the number of drinking fountains by facility and determined how many were working properly and how many were not. It was determined in the 27 facilities surveyed, there are a total of 443 drinking fountains of which 397 (89.6%) are operating properly. This survey did not include the hospitals, however, that data was captured through the water survey of all departments. It was determined that there are a total of 552 drinking fountains County wide. Table 4 on the following pages shows a summary of the number of drinking water fountains by facility, the number working and not working, and whether or not the water has been tested in that facility for safety.

Facilities Management also had tests performed on the quality of the water in the following twelve facilities: County Building, 69 W. Washington, Medical Examiner's Office, the five suburban courthouses, Domestic Violence Courthouse, Hawthorne Warehouse, Juvenile Temporary Detention Center, and Juvenile Court. It was determined that the water met all EPA standards and is acceptable to drink in all of these facilities. It must be noted that there is a perception among employees that the water coming out of the water fountains is not acceptable to drink. Copies of the test results can be found in the Appendix.

### **Filtration Types**

Once it is decided to replace bottled water coolers with bottle-less water systems, it will need to be determined which type of filtration system will be installed. The two primary filtration options for bottle-less water systems are standard filtration and reverse osmosis. Reverse osmosis is a more complete filtration, however, is much more expensive. One vendor stated that reverse osmosis was "over filtration" for a large municipal water supply such as Chicago's, would result in slow water production leading to staff complaints, and would make the project cost prohibitive due to the increased costs associated with a reverse osmosis system.

### **Installation Issues**

The majority of the County facilities do not have plumbing in close proximity to the office space. The plumbing is primarily located in bathrooms, both public and private, and distances to office space widely varies depending on the facility. The longer the distance, the higher the cost due to additional labor and materials required to install the system.

It must be noted that the vast majority of the companies which provide bottle-less water systems do not use union plumbers to install these systems nor do they install using the materials required by code in the City of Chicago, i.e. copper or stainless steel versus plastic. These two additional requirements considerably increase the cost of installation of these systems. Vendors have estimated that an installation of a system which is 50 feet or greater from a water source is will cost an additional \$200 to \$700.

If the County were able to utilize in-house plumbing staff currently working for Facilities Management, this cost could be reduced. However, it must be noted that Facilities Management does not currently have enough staff to dedicate to this large project.

**Table 4: Drinking Fountain Survey Results**

Facility & Address	Water Tested	No. of fountains	Working	Not Working	Comments
Cook County Building 118 N. Clark St., Chicago, 60602	Yes 3/7/08	17	14	3	Not working in Room 112, Room 230 & Room 1160
Bridgeview Courthouse 1022 S. 76 <sup>th</sup> Ave. Bridgeview, IL 60453	Yes 3/18/08	30	30	0	
Cook County Administration Building 69 W. Washington, Chicago, IL 60602	Yes 10/17/07	39	32	7	Only 10 appear to be showing sign of usage
Criminal Courts Administration Building 2650 S. California, Chicago		21	19	2	
Criminal Court Building 2600 S. California, Chicago		9	3	6	Fountains need to be replaced.
Hawthorne Warehouse 4545 W. Cermak, Chicago, IL 60623	Yes 3/24/08	4	3	1	1 is newly installed in 8/2006
Juvenile Center West Court Building 2245 W. Ogden, Chicago, IL 60612	Yes 3/19/08	18	18	0	All accessible to public & employees
Juvenile Temporary Detention Center 1100 S. Hamilton St. Chicago, IL 60612	Yes 3/19/08	16	12	4	
Boot Camp-DOC 2801 S. Rockwell, Chicago, IL		13	13	0	
Division 2-dorm 1 DOC 2717 S. Sacramento		10	8	2	Sick call room needs major repairs
Division 2-dorm 2 DOC 2717 S. Sacramento		13	11	2	
Division 2-dorm 3 DOC 2717 S. Sacramento		10	9	1	FF house water shut off
Division 2-dorm 4 DOC 2717 S. Sacramento		7	7	0	
Division 5 2700 S. California		14	11	3	

Division 6 2801 S. Sacramento	11	8	3	
Division 10 2750 S. California	20	19	1	Room 1 C Water shut off
Division 17 Old Cermak 2800 S. California	5	3	2	Knob & handle missing on the 2 not working
South Campus 3026 S. California	42	39	3	1 is working in Building 3, 2 not working in Building 4. (South Campus has 5 buildings)
Rockwell Ware house 2323 S. Rockwell, Chicago, 60608	10	10	0	
Domestic Violence Courthouse 555 w. Harrison, Chicago, 60607	Yes 3/19/08	27	27	0
Markham Courthouse 16501 S. Kedzie, Markham, 60426	Yes 3/18/08	27	25	2
Maywood Courthouse 1500 S. Maybrook , Maywood, 60153	Yes 3/18/08	12	12	0
Maywood Sheriff's Building 1401 Maybrook Drive, Maywood 60153	3	3	0	All new fountains except for 1 All new fountains
Maywood Whitcomb Building 1311 Maybrook Drive, Maywood 60153	5	5	0	3 new fountains
Rolling Meadows Courthouse 2121 Euclid Rd., Rolling Meadows 60008	Yes 3/19/08	24	0	9 fountains are accessible to the public 15 to employees
Skokie Courthouse 5600 Old Orchard Road, Skokie, 60076	Yes 3/19/08	25	23	2 need new compressors 6 are accessible to the public, 19 for employees
Forensic Institute 2121 W. Harrison, Chicago 60647	Yes 3/19/08	11	9	7 are accessible to the public, 4 for employees
<b>Total</b>	<b>443</b>	<b>397</b>	<b>46</b>	

It must also be noted that the County does not own all the facilities which are occupied by County agencies such as the Daley Center, police courts, rental facilities, etc. and the County cannot require these building owners to install the plumbing required for bottle-less water coolers. Facilities Management does not operate 69 W. Washington, however, the Office of the Building has begun installing bottle-less water systems as a pilot project. The hospitals would need to have Buildings and Grounds staff perform the installations if it was determined to have the systems installed in-house.

#### **Disposal Issues**

Once a bottled water cooler is replaced, it cannot be simply disposed or salvaged. Each system will need to have an engineer evacuate the freon from the system and dispose of the freon in a proper manner prior to removal. Facilities Management estimates that the freon evacuation and disposal process will cost up to \$100 per system.

#### **Discussions and Facility Tours with Vendors - Possible Pilot Project**

Purchasing identified twelve locations, eight in the County Building and four in the Bridgeview Courthouse, for the installation of reverse osmosis bottle-less water dispensers as a pilot project. Purchasing, Facilities Management, Industrial Engineering, and representatives of four bottle-less water dispenser vendors toured each of these facilities. During these tours, Facilities Management informed the vendors that union tradespeople would be required for any work performed on a County facility. This included any required plumbing, carpentry, plastering, painting, or electrical work.

Of the four vendors who toured the facilities, only one submitted a cost proposal for the 12 reverse osmosis systems. The other vendors did not submit a cost proposal on a reverse osmosis system because they believe reverse osmosis filtering was over filtration for a large municipal water supply such as Chicago's, would result in slow water production leading to staff complaints, and would make the project cost prohibitive due to the increased costs associated with a reverse osmosis system. One vendor submitted a cost proposal for "standard" NSF certified filtration and requested to not be included in the process if the County decided on reverse osmosis filtering. This proposal quotes the per unit monthly rental costs plus the hourly labor charge for installation and indicates that all installation charges will be passed on the County at cost broken down by unit.

At the current time, this pilot project has been put on hold until decisions are made on the direction of the bottled water cooler replacement project County wide.

## **Replacement Alternatives and Associated Costs**

The following shows the costs associated with the current situation compared to three different alternatives over a five year period, the estimated depreciative life of the water system. No matter which option is chosen, Purchasing would need to develop specifications for the project so that it can be competitively bid.

### **Current Situation Costs**

Data provided by the Comptroller's Office indicated that the estimated average annual bottled water and water systems cost over the past three years is \$553,289. As stated previously in the report, the Bureau of Health has removed all bottled water coolers from their facilities where possible and have reduced the County's costs by \$172,969. Therefore, the current estimated annual cost for bottled water and water systems is \$380,320. This total includes the leasing costs, filter costs, and bottled water refill costs. Annual costs by department between 2005 and 2007 can be found in Table 3 on page 9.

The total estimated five year cost of the current situation is \$1,889,100.

### **Option I - Replace All Systems**

This option is to replace all existing bottled water coolers with bottle-less systems in facilities which are owned and operated by the County. The replacement of all the County's current bottled water coolers with bottle-less water systems would have a large, immediate financial impact on the County. If all 1,210 bottled water coolers were replaced with County owned systems, the estimated initial capital cost is \$2,057,000, with a five year estimated cost of \$2,783,000 which includes maintenance, annual replacement of filters, and the disposal of the existing systems. This option would eliminate the estimated \$380,320 annual cost of bottled water and have a payback in approximately 8.4 years. The calculation of these estimates are as follows:

#### **Capital and Installation Cost**

Average Cost of Bottle-less Water Cooler:	\$ 700
Average Installation Cost of Cooler:	\$1,000 ( <i>Facilities Management estimate</i> )
	\$1,700

Facilities Management estimated the installation costs including materials as well as the use of union tradespeople including plumbers, carpenters, and painters. This cost could range from \$400 to \$2,000 depending on the location of the unit and the distance the unit is from the water source. The current price of copper is extremely expensive.

$$1,210 \text{ coolers} \times \$1,700 = \$2,057,000$$

#### Ongoing Maintenance/Filter Costs

The majority of the bottle-less coolers will need to have the filter replaced on an annual basis at an estimated cost of \$50. The systems from time to time will need maintenance services which will have an average annual cost of \$50.

Estimated Annual Filter/Maintenance Cost:  $\$100 \times 1,210 = \$121,000$

#### Disposal of Existing Systems

Facilities Management estimated the cost of the required evacuation of the freon from the existing bottled water coolers and the disposal of the system \$100.

Estimated Disposal Cost:  $\$100 \times 1,210 = \$121,000$

Over a five year period, the total cost of this alternative would be \$2,783,000 as follows:

$\$2,057,000 + (\$121,000 \times 5) + \$121,000 = \$2,783,000$

The payback period for this option would be approximately 8.4 years. The estimated life of the bottle-less water systems is 5 to 10 years depending on the usage and maintenance.

The County could choose to spread the cost over several years by renting/leasing the systems instead of purchasing the bottle-less water coolers. Vendors provided monthly rental estimates which ranged from \$32 to \$45 per month, or \$384 to \$540 annually, which included installation of the cooler using non-union trades and plastic tubing. None of the vendors provided a quote using the union trades and copper/stainless steel piping.

Just for cost calculation purposes, assuming that the lease cost would be on the high end of the quotes at \$45 per unit, replacing all 1,210 bottled water coolers would cost \$653,400 annually, or \$3,267,000 over five years.

It must be noted that there will be a portion of the County's bottled water coolers will not be able to be replaced because they are located in facilities not operated by the County. In order to replace the 334 units in the Daley Center, the County would need to work with the Public Building Commission to have the project funded and approved.

#### Option II - Phased Installation of Bottle-Less Water Systems

This Option is a phased replacement of the bottled water coolers. Phase I would have bottle-less water coolers installed on a building by building basis, in all locations near an existing water source and require departments to eliminate all their bottled water coolers. All departments would have access to at least one water cooler. Exceptions would be made to keep bottled water coolers in locations that have public health concerns and do not have a water source in close proximity to the existing cooler.

Phase II of this option would be to assess the needs of each facility and department for additional bottle-less water systems that are necessary for logistical or public health reasons. Once an assessment is completed, additional bottle-less water systems could be installed.

This Option will immediately reduce the number of water coolers throughout the County and reduce the County's operating expenditures. Assuming only half of the current bottled water coolers were replaced, the initial cost is estimated to be \$1,028,500 with a five year estimated cost of \$1,391,500 which includes maintenance, annual replacement of filters, and the disposal of the existing coolers. This option would eliminate a good portion of the estimated \$380,320 annual cost of bottled water and have a payback in approximately 3.4 years. The calculation of these estimates are as follows:

Capital and Installation Cost

Average Cost of Bottle-less Water Cooler:	\$ 700
Average Installation Cost of Cooler:	<u>\$1,000</u>
	\$1,700

$$605 \text{ coolers} \times \$1,700 = \$1,028,500$$

Ongoing Maintenance/Filter Costs

The majority of the bottle-less coolers will need to have the filter replaced on an annual basis at an estimated cost of \$50. The systems from time to time will need maintenance services which will have an average annual cost of \$50.

$$\text{Estimated Annual Filter/Maintenance Cost: } \$100 \times 605 = \$60,500$$

Disposal of Existing Systems

Facilities Management estimated the cost of the required evacuation of the freon from the existing bottled water coolers and the disposal of the system \$100.

$$\text{Estimated Disposal Cost: } \$100 \times 605 = \$60,500$$

Over a five year period, the total cost of this alternative would be \$1,391,500 as follows:

$$\$1,028,500 + (\$60,500 \times 5) + \$60,500 = \$1,391,500$$

The payback period for this option would be approximately 3.4 years. The estimated life of the bottle-less water systems is 5 to 10 years depending on the usage and maintenance.

Again, the County could choose to spread the cost over several years by renting/leasing the systems instead of purchasing the bottle-less water coolers. Using the same costs as shown in Option 1 for cost calculation purposes, replacing 605 bottled water coolers would cost \$326,700 annually, or \$1,633,500 over five years.

### **Option III - Installation of Building Filtration Systems**

Building-wide filtration systems in County owned facilities could be installed, however, it would be the most costly of the three options. This would filter and purify water coming into the building which would be stored in a large tank and distributed throughout the building either through existing pipe or new pipe installed directly to faucets, water fountains, or dispenser systems.

If the County installed a building-wide system and distributed filtered water through all existing pipes in the facility, only a small portion of the buildings water usage would be used for drinking with a large percentage of water used for hygienic or operational purposes (toilets, cleaning and janitorial, chillers/boilers, landscaping, etc.) which does not require further filtering. Current plumbing configurations in County facilities make it difficult, costly, or possibly infeasible to separate the two water systems.

The estimated capital cost of a building wide filtration system and tank varies greatly and is dependant on many factors including incoming water quality, pressure, and temperature from the municipal water supply, average daily facility usage, and physical building characteristics and desired output pressure. Commercial reverse osmosis systems with pretreatment can cost from \$20,000 for lower usage County facilities to more than \$160,000 for large usage facilities. This estimated cost includes the capital cost of the system equipment, however, does not include the costs of system installation, new or additional required plumbing required to distribute the filtered water, individual dispensers/fountains, or system maintenance/filters, all of which could be very costly. If drinking water was not separately plumbed from hygienic or operational usage, a larger system would be required. Even though a dedicated drinking water system would require a smaller system, a large amount of new plumbing would need to be installed.